

REMARKS

Claims 1, 2, 16, 20, and 21 were rejected pursuant to 35 U.S.C. §102(a) as anticipated by Hunt (US 2003/139664). Claims 1, 2, 4, 6, 9, 10, 12, 14-17, and 19-24 were rejected pursuant to 35 U.S.C. §102(e) as anticipated by Gilbert (US 6,530,887). Claims 16, 20, and 21 were rejected pursuant to 35 U.S.C. §102(e) as anticipated by Peterson (US 2004/0181154). Claims 1, 2, 4, and 6 were rejected pursuant to 35 U.S.C. §103(a) as unpatentable over Leavitt (US 6,491,634) in view of Petrofsky (US 5,573,001), and further in view of Gilbert. Claim 3 was rejected pursuant to 35 U.S.C. § 103(a) as unpatentable over either (a) Hunt or (b) Leavitt in view of Petrofsky further in view of Gilbert and further in view of Chiang (US 5,839,442). Claims 4, 6, and 17 were rejected pursuant to 35 U.S.C. §103(a) as unpatentable over Hunt in view of Gilbert. Claim 5 was rejected pursuant to 35 U.S.C. §103(a) as unpatentable over (a) Hunt, (b) Gilbert, or (c) Leavitt in view of Petrofsky in view of Gilbert in further view of Peterson. Claims 7 and 18 were indicated as allowable if amended into independent form.

Applicant respectfully requests reconsideration of the rejections of claims 1-6, 9-12, 14-17, and 19-24, including independent claims 1, 9, 16 and 22.

Independent claim 1 has been amended to include the limitations of allowable claim 7. There are no intervening claims, so claim 1 is allowable.

Independent claim 9 recites a transducer assembly comprising a connector housing at least partially enclosing a detachable connector and enclosing a signal processing device where the connector housing connects to the transducer by a cable external to the connector housing between the connector housing and the transducer. Gilbert does not disclose these limitations. The cable 40 of Gilbert connects the handheld housing 30 to a host computer 5 (col. 5, lines 12-23). This cable is a simple Firewire or USB cable (col. 11, lines 16-34). The handheld housing 30 is part of the probe 3, which includes the transducer head 32 and array 10 (col. 5, lines 18-23). The array 10 connects to the circuits in the handheld housing 30 over lines 122 and 124 (col. 6, lines 45-55). The array 10 and circuitry are incorporated into a single housing (col. 3, lines 48-53). Gilbert provides for a Firewire cable to connect circuits in a probe to a host computer. The connector of the probe assembly is a mere Firewire connector. Gilbert does not provide a connector housing at least partially enclosing signal processing device. Gilbert connects a transducer housing with a host computer, and do not provide a housing spaced from the transducer by an external cable where the spaced apart housing includes signal processing.

Independent claim 16 has been amended with limitations similar to allowable claim 7, so is allowable for the same reasons as claim 1. Hunt, Gilbert, and Peterson do not disclose partial beamforming in the probe housing and conversion in the connector housing.

Independent claim 22 is allowable for similar reasons as claim 9. Gilbert provides a single probe housing with a Firewire cable for connection to a host computer. Gilbert does not disclose processing in a probe or transducer housing and processing in a connector housing connected to the transducer housing by an external cable.

Dependent claims 2-6, 10-12, 14-15, 17, 19-21, and 23-24 depend from one of the independent claims, so are allowable for the same reasons as the respective base claim. Further limitations patentably distinguish from the cited references.

Claim 4 recites partially beamforming demultiplexed signals. Gilberts use a transmit/receive multiplexer to switch between transmit and receive operation. Signals output by such TX/RX mux are not demultiplexed signals. The Examiner does not cite to demultiplexing in Leavitt or Petrofsky. Claim 14 is allowable for similar reasons.

Claim 6 recites that the converting is mixing. Gilberts use a multiplier 627 for demodulation as part of beamforming, not mixing of beamformed signals (i.e. the summer 630 is after the mixer 627). The Examiner does not cite to demultiplexing in Leavitt or Petrofsky. Claim 12 is allowable for similar reasons.

Claim 17 recites sub-array mixing. Mixing for demodulation as part of beamforming shown in Gilbert is not sub-array mixing. Furthermore, Gilbert does not provide for both mixing as part of beamforming and then converting the beamformed signals by further mixing.

CONCLUSION:

Applicant respectfully submits that all of the pending claims are in condition for allowance and seeks early allowance thereof.

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